

EXHIBIT A

Michael Roberts

Curriculum Vitae 2008

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Section A – Two page summary of major achievements

1. Name and address: Michael Stephen Roberts

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2. Current academic appointment (1994-) and Academic Qualifications

- Professor, NHMRC Senior Principal Research Fellow & Director, Therapeutics Research Unit
- Adjunct Professor, University of Canberra
- Visiting Professor, University of Lyon, France
- BPharm (Adel), MSc, PhD, DSc (Syd), Dip Tert Ed (NE), MBA (Qld) FAIPM

3. Previous academic appointments

- Lions Professorial Research Fellow in Medicine & Pharmacy, University of Queensland, 1989 -1993; Adjunct Professor in Science & Technology, Bond University, 1989 – 1990
- Professor (& Chairman) in Pharmacy, University of Otago, NZ, 1986 - 1989
- Lecturer & Senior Lecturer in Pharmacy, University of Tasmania & Tasmanian College of Advanced Education, 1976 – 1986

4. Key Awards

- *Inaugural S E Wright Medal* for proficiency in Master of Science (Qualifying) 1971, University of Sydney
- Elected to Fellow of the Australian Institute of Pharmacy Management (F.A.I.P.M) in 1987 for contribution to the pharmacy profession
- *APSA Achievement award "for outstanding achievements in pharmaceutical science* - Australasian Pharmaceutical Science Association (APSA) (Inaugural Medal for APSA) 2004
- *Michael Rand Medal for outstanding contribution to the disciplines of clinical and experimental pharmacology or toxicology nationally and internationally* - *ASCEPT* (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists). (Awarded biennially) 2007.
- Elected to Fellow of the Australian College of Pharmacy (F.A.C.P.) in 2007 for contribution to the pharmacy profession

5. Research

- Undertaken and published peer reviewed research in: rational drug design, drug delivery (especially skin and oral), clinical pharmacokinetics, the pharmacist's role in quality use of medicines and translation of research into practice/commercial outcomes.
- Former President of Australasian Pharmaceutical Science Association (APSA); former Councillor of ASCEPT; Vice President International Skin Pharmacology (ISP)
- Peer Reviewed Research publications >310 (566 communications in total, including 43 book chapters) plus co-editor of 6 research books.
- Editor of Skin Diseases for Drug Discovery Today (IF 7.15)
- Associate Editor of Skin Pharmacology & Applied Physiology (IF 1.48); Member of Editorial Board for J Pharmacokinetics & Pharmacodynamics, Pharmaceutical Research, Clinical Pharmacokinetics, Current Drug Delivery, Drug Metabolism & Pharmacokinetics
- Assessed quality of research in the pharmacy at the University of Tasmania for their DVC (Research)
- University of South Australia NHMRC Project Grant Development Scheme (PGDS) Reviewer 2008

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- Member NHMRC Review committees 1994-1997, 1999-2003, 2005-7.
 - Member of NHMRC Advisory Committee on Health & Nanotechnology 2007-9
 - Member, National Health & Medical Research Council Grant Review Panel (GRP) Selector Committee, 2008.
 - Member NZ HMRC Review Committee 2006-8
 - 5 patents, 2 provisional patents
 - Two major Australian government funded consultant pharmacist programs have arisen, in part, from this work are the Residential Medication Management Review Program and the Home Medicines Review Program arose in part from three large national, multi-site studies undertaken in this area.

6. Conferences

- Co-Chair, Gordon Research Conference on Barrier Function of Mammalian Skin, Salve Regina, USA August 5-10, 2007 (Co-Vice Chair, 2005)
- Co-Chair, ISP/AAPS/PPP Workshop on Trailblazing the skin frontier: evidence base, opportunities & training, George Washington University, Washington, D.C., August 11-13, 2007, USA 2007.
- He has also chaired 8 sessions at the different international symposiums in USA, Japan, France, Netherlands and Australia and presented 19 invited presentations at international conferences in the last 10 years.
- Member of Scientific Advisory Committee - Perspectives in Percutaneous Penetration since 1991.
- Convenor & co-chair of Drug Regulatory Symposium at the 2008 Australian Health & Medical Research Congress, Brisbane 2008
- Invited conference presentations given in 2008 are:
 - 19th Annual Conference of the Australian College of Pharmacy Practice and Management, Norfolk Island
 - Australasian Pharmaceutical Science Association Meeting, Canberra
 - 10th Australian General Practice Network (AGPN) Forum 29 October to 1 November 2008, Darwin
 - 1st International Conference On Drug Design & Discovery, United Arab Emirates Feb 4-7, 2008
 - 7th International Conference & Workshop on Cell Culture & *in vitro* Models for Drug Absorption & Delivery, Germany
 - 10th International Conference on Perspectives in Percutaneous Penetration, France
 - 8th International Symposium of Controlled Release Society, India
 - Lions Q4 Convention, Hervey Bay
 - 10th Australian General Practice Network (AGPN) Forum Darwin
 - Controlled Release Society, Canberra
- Conference invitations for 2009:
 - Canadian Pharmaceutical Science Association, Winnipeg, June – Session Chair and Invited speaker
 - Controlled Release Society, Copenhagen, July - Invited speaker
 - Gordon Research Conference US August - Invited session chair

7. Teaching

- Supervised 30 completed PhD theses, Examiner for 16 PhD Theses
- Chair of University of Qld postgraduate management clinical pharmacy program committee (Certificate, Diploma & Doctorate in Clinical Pharmacy) (Convenor 1990, initial coordinator & teacher)
- Advised on curricula for University of Canberra Master in Pharmacy Program
- Chair, Education Committee for Australian Institute of Pharmacy Management 1998-2004
- Taught in MB BS (Qld), MB ChB (Otago, NZ), MB BS (Tas)

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- Taught in BPharm (UQ), BPharm (Otago, NZ), BSc (Pharm)(Manc,UK), BPharm (Tas), BPharm (Syd)
 - Convened & taught postgraduate clinical pharmacy programs e.g. MCLin Pharm (UQ), MPharm (Clin)(Otago)

8. *Ethics & Regulatory Responsibilities/Experience*

- former Chairman of University of Queensland's Health Sciences (and later Main) Animal Ethics Committee (1992-2003)
- Current member of Australian Drug Evaluation Committee (Pharm) Committee (2004 -2009)
- Current member of Australian Governments's Advisory Group on Chemical Safety (2006-2008).
- Current member of NHMRC Advisory Committee on Health & Nanotechnology 2007-9
- Peer Consultant to Health Canada on Risk Assessment of Consumer Dermal Health Products
- Australian Government Medicine's Evaluation Committee (2008 – 2013)
- Chair, WHO Committee International Program on Chemical Safety - Environmental Health Criteria for Dermal Absorption 2005
- Member of the European Scientific Committee on Consumer Products (Brussels) in 2005, 2008
- Inaugural Member of National Advisory Group on Consultant Pharmacy
- Conducted a 3 day course on pharmaceutical science and clinical pharmacokinetics for the Australian Government Therapeutics Drug Administration branch (TGA) in November 2005

Section B – Detailed Curriculum Vitae***a) Name and Contact Details***

Michael Stephen Roberts (Professor)

University Address:

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 Buranda,
 Queensland,
 Australia 4102
 Telephone: 61-7-3240 2546
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 E-mail: mroberts@soms.uq.edu.au

Residential Address:

34 Tolaga St,
 Westlake,
 Queensland
 Australia, 4074
 Telephone: 61-7-376 9397
 Facsimile: 61-7-376 4357
 Email: M.Roberts@uq.edu.au

b) Citizenship, Date of Birth, Gender

Australian citizen, born in South Australia 6 June 1949, male

c) Academic Background***Degrees/Diplomas***

<i>Degree/Diploma</i>	<i>University</i>	<i>Year</i>
Doctor of Science (D.Sc.)	University of Sydney	2000
Master of Business Administration (M.B.A.)	University of Queensland	1994
Diploma in Tertiary Education (Dip.Tertiary.Ed.)	University of New England	1979
Doctor of Philosophy (Ph.D.)	University of Sydney	1976
University of Sydney (M.Sc.)	Master of Science	1973
University of Adelaide (B.Pharm.)	Bachelor of Pharmacy	1970

d) Prizes/Distinctions

- Inaugural *S E Wright Medal* for proficiency in Master of Science (Qualifying) 1971
- *Incentive* award for performance as a *Professor* at the University of Otago in 1987
- *Best poster* (Structure determining strategy or strategy determining structure in facilitating the formation of the Quality of Medication Care Team and its intervention strategies) - The Pharmaceutical Education Program 1995 Work in Progress Conference, Sydney August 24-26
- APSA Inaugural Lecturer *Pharmaceutical Science – enabling quality therapeutics and pharmaceutical care: much learned, more to learn*. Australian Pharmaceutical Science Association Annual Conference Melbourne Dec 4-7, 2004
- Australasian Pharmaceutical Science Association (APSA): *APSA Achievement award "for outstanding achievements in pharmaceutical science"* APSA Annual Conference 2004 Melbourne Australia
- *ASCEPT* (Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists) *Michael Rand Medal* for *outstanding contribution to the disciplines of clinical and experimental pharmacology or toxicology nationally and internationally*. Lecture to be presented in Adelaide in December 2007.

Special qualifications

- Registered pharmacist South Australia 1971, subsequently registered in New South Wales, Tasmania, New Zealand and Queensland; current registration in Queensland
- Elected to Fellow of the Australian Institute of Pharmacy Management (*F.A.I.P.M*) in 1987 for contribution to the pharmacy profession
- Elected to Fellow of the Australian College of Pharmacy (*F.A.C.P.*) in 2007 for contribution to the pharmacy profession

e) Current Appointment

NHMRC Senior Principal Research Fellow, Professor & Director of Therapeutics Research Unit

Research group in 2005: 32 people

- Director (Prof Michael Roberts)
- UQ Research Fellow & NHMRC Senior Research Officer (Dr Sheree Cross);
- NHMRC Senior Research Officers (Dr Yuri Anissimov, Dr Daniel Hung);
- Honorary Research Fellow (Dr Michael Whitehouse);
- NHMRC Research Officers (Dr Andrew Dalley, Ms Julijana Nikolovski);
- University of Queensland Professional Officer (Dr Paul Masci);
- NHMRC RA (Jenny Ordenez, Melissa Rutt);
- Research Officer (Clare Ientile);
- Postdoctoral fellows (Dr Jeff Grice, Dr Julie Stokes, Dr Frank Fontaine, Dr Tom Robertson, Dr Judy Craft);
- PhD students (Kent Fanning, Geoff Lewis, Young Mo, Nadeeka Dissanayaka, Gerhard Siebert, Ken Newton, Peter Kruger, John Chapman, Brett McFarlane; Kanchana Ranasinghe);
- Masters Students (Robert Pennisi, Arash Gol-Mohamadi);
- Honours Students (Ya-Ting Wu, Li-En Theolynn);
- Consultant RO (Brett McWhinney);

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- Executive Secretary (Narelle Walker).

Current Research Infrastructure: Therapeutics Research Unit (TRU)

- *Ground Floor Building 35; PA Hospital* (200 m²) and following equipment: 1 Multiphoton microscope; 1 HPLC/MS/MS; 4 HPLCs, 1GLC, 1IR, 1 gamma counter, 1 scintillation counter, UV spectrophotometer, 3 microscopes, fluorimeter, low pressure chromatography systems, electrophoresis equipment, TLC equipment, platelet aggregometer, clinical chemistry gas analysis, organic chemistry laboratory, perfusion apparatus, skin physiology equipment (Laser Doppler for blood flow, transepidermal water loss, skin hydration, skin pH), computers
- *Floor 2 Building 35; PA Hospital* (100 m²): Office space

Access to/Shared Infrastructure

- *Floor 2; PA Hospital Research Building* (~ 40 m² dedicated to TRU): Cold room, column chromatography, molecular biology; Confocal microscope, HPLC/MS, NMR, MS, PCR and molecular cloning equipment, Chemical pathology analysis, Histology preparation, Imaging equipment and software;
- *PAH Biological Research Facility (Animals) and Experimental ICU Unit*
- *UQ and QUT* - Electron microscopy, NMR, X-ray microanalysis, FTIR etc services
- *RBWH Centre for Burns, Trauma & Critical Care* (TRU is a partner in the Centre) - space
- *Imaginot* (via agreement Imaginot & UQ) - Differential Scanning Calorimetry

f) International, National and Local Profile
International
Symposium Organiser

- Co-chair: Gordon Research Conference (GRC) on Barrier Function of Mammalian Skin, Salve Regina University, Newport, RI, August 5-10, 2007 (> 50 over subscribed).
- Co-chair: ISP/PPP/AAPS Workshop, Trailblazing the skin frontier: evidence base, opportunities & training, George Washington University, Washington, D.C., August 11-13, 2007.
- Co-Vice Chair of Gordon Research Conference on "Barrier Function of Mammalian Skin" (USA) for 2005, Mt Holyoke College, Massachusetts 7-12 August.
- Sessions at "8th World Congress on Clinical Pharmacology and Therapeutics" (CPT2004), Brisbane, 1-6 August 2004.
 - *Matching patient pharmacodynamics with an appropriate delivery system*
 - *Cognitive clinical pharmacy services – interaction with clinical pharmacology*
- *Integrating therapeutic research into practice.* "Federation Pharmaceutique International Symposium (in conjunction with Australian Society of Clinical and Experimental Pharmacologists and Toxicologists), Sydney, 5 September 2003.

Chairperson of Conference Sessions (Invited)

- *Track 1-8: Hepatology and Drug Discovery* at BITS 6th Annual Congress of International Drug Discovery Science and Technology (IDDST), Beijing, Oct 18-22, 2008
- Topical discussion at "Perspectives in Percutaneous Penetration", La Grande Motte, France, 25-29 April 2010

- *Is the patient taking the tablets?* 3rd Pharmaceutical Science World Congress, Amsterdam, April 22-25, 2007.
- *Strategies to maximise and assess skin penetration.* Gordon Research Conference on Barrier Function of Mammalian Skin, Salve Regina, USA August 5-10, 2007.
- *Nanotechnology and the Skin – What are the risks and opportunities?* ISP/PPP/AAPS Workshop, Trailblazing the skin frontier: evidence base, opportunities & training, George Washington University, Washington, D.C., August 11-13, 2007.
- *Barrier Function.* International Skin Pharmacology (ISP), Rome, 2006.
- *Nanoscale characterization of skin permeability.* Gordon Research Conference on “Barrier Function of Mammalian Skin” Mt Holyoke College, Massachusetts, USA, 7-12 August 2005.
- *Drug metabolism and transport studies in drug discovery and development.* Pharmaceutical Sciences World Congress (PSW2004), Kyoto, Japan, 29 May–3 June 2004.
- *Consumer product risk assessment.* Topical discussion at “Perspectives in Percutaneous Penetration”, La Grande Motte, France, 13-17 April 2004 (with K Brain and J Heylings).
- *Does drug delivery deliver?* At FIP (Federation Internationale Pharmaceutique) Sydney, 6-8 September 2003.
- *Risk assessment in pesticide permeation: is it reliable?* Topical discussion at “Perspectives in Percutaneous Penetration”, Antibes Juan-les-Pins, France, 2-5 April 2002 (with J Heylings).
- *Skin penetration of sunscreens – should we be concerned?* Topical discussion at “Perspectives in Percutaneous Penetration” La Grande Motte, France, 26-29 April 2000.
- Prediction of Percutaneous Penetration VI in Sth Amsterdam Netherlands, September 1999.
- Prediction of Percutaneous Penetration V in Montpellier France, April 1997.
- Prediction of Percutaneous Penetration IV in Montpellier France, April 1995.
- Prediction of Percutaneous Penetration III in Montpellier France, April 1993.
- Gordon Conference - Barrier Properties of Mammalian Skin, New Plymouth, USA, Aug 1993.
- Controlled Release Society – Advances in Delivery of Therapeutic and Diagnostic Agents – Transdermal Session, Sydney, 1992.
- 10th International Congress of Pharmacology, Drug Delivery Systems, Sydney, 1987.

Invited lecture (personal invitation)

- *Drug Structure-hepatic Pharmacokinetic Relationships in Normal and Diseased Livers* (Keynote speech) at BITS 6th Annual Congress of International Drug Discovery Science and Technology (IDDST) Beijing, Oct 18-22, 2008
- *In vitro and in vivo imaging of xenobiotic transport in human skin and in the rat liver*, 3rd Workshop on Advanced Multiphoton and FLIM Techniques (FLIM 2008), Saarbrücken June 30 – July 2, 2008.
- *Quantum dots – or should I say ZnO nanoparticle dermal absorption* 7th International Conference & Workshop on Cell Culture & in vitro Models for Drug Absorption & Delivery, Germany Feb 20-21, 2008
- *Targeted topical drug delivery* 8th International Symposium of Controlled Release Society, India Feb 26-27, 2008
- *Skin structure and function pre conference course at 10th* Perspectives in Percutaneous Penetration International Conference in France Feb 2008
- *Targeted topical drug delivery* 1st International Conference On Drug Design & Discovery, February, United Arab Emirates Feb 4-7, 2008

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- *When are dose administration aids of benefit?* 3rd Pharmaceutical Science World Congress, Amsterdam, April 22-25, 2007.
 - *What evidence do we believe? – case study analysis using tea tree oil & other examples* ISP/PPP/AAPS Workshop, Trailblazing the skin frontier: evidence base, opportunities & training, George Washington University, Washington, D.C., August 11-13, 2007.
 - *Topical delivery.* Johnson & Johnson (Asia-Pacific) Singapore Nov 20, 2006.
 - *Intracellular Pharmacokinetic Modelling* PKUK, Sheffield, UK Nov 15-17.
 - *Targeted topical application.* International Skin Pharmacology (ISP) Meeting, Rome, UK Nov 5-8, 2006
 - *Dermal safety of Micro- and Nano-structured formulations.* American Association of Pharmaceutical Sciences Meeting, San Antonio, US (Oct 29-Nov 3), 2006
 - *The latest science (including safety) on nanotechnology and skin penetration.* FDA public hearing on the science of nanomaterials Oct 10, 2006 (Washington DC, USA).
 - *Follicular targeting.* Pfizer, Ann Arbor, USA Oct 26
 - *Skin structure and function pre conference course at Perspectives in Percutaneous Penetration* International Conference in France April 2006
 - *Maximum Flux Concept to Predict Skin Penetration.* 6th International Conference & Workshop on Cell Culture & in vitro Models for Drug Absorption & Delivery, Saarbrücken, Germany March 2006
 - Invited by International Programme on Chemical Safety (IPCS/WHO) to meeting in Germany, June 2005, to prepare an Environmental Health Criteria (EHC) document titled *Dermal absorption and chemical risk assessment*.
 - *Absorption of Drugs Through the skin.* Connetics (US, Palo Alto) Lecture Series June 2005
 - *Improved therapeutics using controlled drug delivery systems* “8th World Congress on Clinical Pharmacology and Therapeutics” (CPT2004), Brisbane, 1-6 August 2004.
 - *Transdermal drug delivery and its absorption pharmacokinetics.* FIP/CPA/AAPS International Symposium on Pharmaceutical Science, Nanjing, China, 7-9 June 2004.
 - *Skin structure and function* pre conference course at Perspectives in Percutaneous Penetration, La Grande Motte, France, 17-19 April 2004.
 - *Controlled drug delivery* Controlled Release Society NZ Section, Auckland, November 2003.
 - *Medication management: what have we learnt from evidence based trials?* Federation Pharmaceutique International Symposium “Integrating therapeutic research into practice” (in conjunction with Australian Society of Clinical and Experimental Pharmacologists and Toxicologists), Sydney, 5 September 2003.
 - *Hepatic considerations and issues for drug delivery* FIP (Federation Internationale Pharmaceutique) Sydney, 6-8 September 2003.
 - *Transdermal delivery* Pfizer Pty Ltd, Ann Arbor, Michigan, USA, 11 August 2003.
 - *Formulation issues in transdermal delivery.* Faculty of Pharmacy University of Manitoba, Winnipeg, Canada, 12 August 2003.
 - *Artifacts in imaging.* Gordon Research Conference on Barrier Function of Mammalian Skin, Rhode Island, USA, 3-8 August 2003.
 - *Percutaneous analgesics and NSAIDs in osteoarthritis* in “Pain in Osteoarthritis”. Inflammopharmacology Royal College of Physicians Edinburgh, Scotland, 22-24 April 2003.

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- *Pharmacokinetic implications of hepatic transporter events*. ASCEPT Annual Meeting Dunedin, NZ, December 2002.
 - *Frontiers in PKPD*. Pre-meeting workshop ASCEPT Annual Meeting Dunedin, NZ, December 2002.
 - *Structure/permeability relationship of drugs for the skin*. GPEN (Globalisation of Pharmaceutics Network) Course on Dermal/Transdermal delivery, Ann Arbor, Michigan, USA, 6-8 November 2002.
 - *Cutaneous pharmacokinetics and bioavailability (Modeling, methodology)*. GPEN (Globalisation of Pharmaceutics Network) Course on Dermal/Transdermal delivery, Ann Arbor, Michigan, USA, 6-8 November 2002.
 - *Skin structure and function* pre conference course at Perspectives in Percutaneous Penetration, Antibes Juan-les-Pins, France, 2-5 April 2002.
 - Debate leader *Skin reservoir function is an artifact*. Gordon Research Conference, Rhode Island USA, August 2001.
 - *Tissue pharmacokinetics* at the 9th Workshop on Advanced Methods of Pharmacokinetic & Pharmacodynamic Systems Analysis USC, Los Angeles, USA, June 2001.
 - *Development of the convective dispersion model* to First Congress on Basic Science for Iranian Veterinary Medicine, University of Tehran, Iran, 31 May 2000.
 - *Convective dispersion model* to Department of Pharmacology, Faculty of Medicine, University of Tehran, Iran, 30 May 2000.
 - *Factors affecting percutaneous absorption* to Faculty of Pharmacy, University of Tabriz, Iran, 28 May 2000.
 - *Skin penetration of sunscreens* to Sol Gel Pty Ltd, Tel Aviv, Israel, 4 May 2000.
 - *Skin penetration of sunscreens – are they safe?* PPP, La Grande Motte, France, 26-29 April 2000.
 - *Skin structure and function*. PPP pre conference course, La Grande Motte, France, April 2000.
 - *The convective dispersion model in pharmacokinetics*. Medieval Symposium in honor of Prof M Rowland's 60th birthday Bridgewater Hall Manchester, UK, 28 September 1999.
 - *Quality use of medicines – from research to practice*. Martin Luther University, Halle, Germany, 4 October 1999.
 - *Quality use of medicines – from research to practice*. University of Malta, Msida, Malta, 8 October 1999.
 - *Percutaneous absorption of topically applied NSAIDs and other compounds: role of solute properties, skin physiology and delivery systems* Inflammopharmacology Conference "Side Effects of Non-steroidal Anti-inflammatory Drugs". Atlanta Georgia, USA, 23-26 May 1999.
 - *Quantitative structure penetration relations - do they predict the real thing?* Gordon Research Conference on "Barrier Function of Mammalian Skin", Il Ciocco, Italy, 18-23 April 1999.
 - *Drug delivery systems*. Faculty of Pharmacy, University of Manitoba, Winnipeg, Canada, May 1999.
 - *Pharmacokinetic modeling*. Faculty of Pharmacy, University of Manitoba, Winnipeg, Canada, May 1999.
 - *Drug transport though the Skin*. 25th International Symposium on "Controlled Release of Bioactive Materials" Las Vegas, June 1998.

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- *Recent perspectives in percutaneous penetration*. International Conference on “Perspectives in Percutaneous Penetration”, La Grand Motte, France, April 1997.
 - *Dispersion model*. Kyoto Pharmaceutical University, Kyoto, Japan, November 1995.
 - *Dispersion model*. Bayer-Yakunin Symposium on “Drug Delivery and Pharmacokinetics”, Osaka, Japan, November 1995.
 - *Debate on viability of stratum corneum*. The Gordon Conference on “Barrier Function of Mammalian Skin”, Boston, USA, August 1995.
 - *Transdermal product development*. Ciba Geigy, New York, USA, August 1995.
 - *Transdermal delivery*. Department of Clinical Pharmacology, Halle, Germany, April 1995.
 - *The use of the dispersion model to describe drug disposition*, Department of Clinical Pharmacology, Halle, Germany, April 1995.
 - *Drug use in nursing homes – strategies to improve outcomes in terms of quality medication care*. Department of Clinical Pharmacology, Dresden and School of Pharmacy, Halle, 1995.
 - *Transdermal drug delivery – the importance of drug design and skin physiology*. International Seminar on “Recent Trends in Pharmaceutical Sciences”, Ootacamund, India, February 1995.
 - *Iontophoretic drug delivery*. IOMED, Salt Lake City, August 1993.
 - *Strategies for facilitating percutaneous absorption*. University of San Francisco, Departments of Pharmacy and Dermatology, August 1993.
 - *Targeted drug delivery by topical application*. 18th International Symposium on “Controlled Release of Bioactive Materials”, Amsterdam, Netherlands, July 1991.
 - *Structure-permeability considerations in percutaneous absorption*. “International Conference on Skin Penetration”, Southampton, April 1991.
 - *Iontophoretic transport of selected solutes through human epidermis*. “International Conference on Percutaneous Absorption”, Manchester, April 1989.
 - *Pharmacokinetic modelling*. Department of Pharmacies, Universities of Toronto (Canada), Buffalo (USA) and San Francisco (USA), August 1986.
 - *Perceived response of rheumatoid arthritis patients to NSAIDs*. Satellite “Individual Variability in Response to NSAIDs”, ILAR Meeting, Sydney, May 1985.
 - *Undergraduate pharmacy curriculum* – Department of Pharmacy, University of Manchester, January 1984.
 - *Physiological pharmacokinetics*. Department of Pharmacology, Hong Kong University, February 1984.
 - *Fundamentals of clinical pharmacokinetics*, Beecham Research Laboratories, UK, 1983.

National

Symposia Organiser

- Drug Regulatory Symposium at the 2008 Australian Health & Medical Research Congress, Brisbane

- Symposium on *Skin science and advances in aesthetic therapies* in “Dermal Downunder” to be held Brisbane Convention and Exhibition Centre, 16 March 2005.
- ASCEPT/APSA Pharmacokinetics Hobart 1998

Chairperson of Conference Sessions

- Australian Health & Medical Research Congress, Brisbane 2008
- Australian Society of Clinical and Experimental Pharmacologists and Toxicologists Annual Meeting Hobart 1987, Brisbane, 1993, Hobart 1998.
- Australian Pharmaceutical Science Association Scientific Meeting Brisbane 1981, Sydney 1982, Melbourne 1984, Brisbane 1986.
- Australian Pharmacy Professional (Pharmacy Guild of Australia):
 - Advanced skills in Medication Reviews, March 1997
 - Clinical Pharmacy – Value Added Services, March 1996

Invited lecturer

- *Can veteran outcomes be improved using dose administration aids?* ACT Division of General Practice 4th December 2008, Canberra
- *Can veteran outcomes be improved using dose administration aids?* 10th Australian General Practice Network (AGPN) Forum 29 October to 1 November 2008, Darwin
- *Patient misadventure – under the radar* at the 19th Annual Conference of the Australian College of Pharmacy Practice and Management, May 7-11, Norfolk Island, 2008.
- *Dermal penetration of zinc oxide nanoparticles in sunscreen products* at the Australasian College of Cosmetic Surgery (ACCS), Cosmetic Physicians Society of Australasia (CPSA) and Australasian Academy of Facial Plastic Surgery (AAFPS) joint conference, March 13-16, Gold Coast, 2008.
- *Seeking to Improve Therapeutic Outcomes through Research* at the 10th Southeast Asian Western Pacific Regional Meeting of Pharmacologists and 41st Annual Scientific Meeting of the Society Clinical and Experimental Pharmacologists and Toxicologists Joint Meeting, December 2-6, Adelaide, 2007 Oral-77.
- *Dermal Absorption of Nanoparticles* at the 10th Southeast Asian Western Pacific Regional Meeting of Pharmacologists and 41st Annual Scientific Meeting of the Society Clinical and Experimental Pharmacologists and Toxicologists Joint Meeting, December 2-6, Adelaide, 2007 Oral-84.
- *Multiphoton imaging of zinc oxide nanoparticle penetration into human skin in vivo and in vitro* 2nd Advanced Optical Imaging Workshop University of Melbourne, November 26-28 2007.
- *Drug delivery in 2020 – by the skin and beyond!* Australasian Pharmaceutical Science Association Meeting in Adelaide, December 2006.
- *Fate of permeating substances* at the Australian Society of Cosmetic Chemists Conference (ASCC) 2005 Conference Convention and Exhibition Centre, Brisbane, March 2005.
- Inaugural APSA Lecturer *Pharmaceutical science – enabling quality therapeutics and pharmaceutical care: much learned, more to learn.* Australian Pharmaceutical Science Association Annual Conference Melbourne, 4-7 December 2004.
- *Thrombostat* at AusBioTech Annual General Meeting, Brisbane, 8 November 2004.

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- *Building collaborations through research* in Symposium 6 "The pharmacist in the health care system: a focus on collaboration". Australian Pharmaceutical Science Association Annual Conference, Sydney, 3-5 December 2003.
 - *Dosage administration aids*. Commonwealth Department of Veterans' Affairs, Melbourne, 4 June 2001.
 - *Quality use of medicines in nursing homes*. ASA's Annual Conference at Brighton, Sydney, April 2000.
 - *Dosage administration aids*. Commonwealth Department of Veterans' Affairs, Canberra, 20 October 1999.
 - *The importance of a multi disciplinary approach to medication management* ASA's "4th Annual Northern Board and Administrators Conference", East Ballina, November 1999.
 - *The effectiveness of better medication management of people in nursing homes*. "Aged Care Australia and the Australian Association of Gerontology National Conference", Sydney, 5-8 September 1999.
 - *Targeted drug delivery to the skin and deeper tissues: role of physiology, solute structure and disease*. Australian Society of Clinical & Experimental Pharmacologists, Monash University, December 1996.
 - *Transdermal drug delivery and percutaneous absorption*. Australasian Pharmaceutical Science Association/Australian Society of Clinical and Experimental Pharmacologists, Adelaide, December 1995.
 - *Quality use of medication care project and consultant pharmacy services in Australian nursing homes: relationship between study evaluation and design*. The Pharmaceutical Education Program Work in Progress Conference, Sydney, 24-26 August 1995.
 - *Comparison of health care, and approaches to follow and benefit by*. Australian Pharmacy Professional, Gold Coast, 11-14 March 1994.
 - *Star Wars & pharmacy in the 21st century*. Key Note Speaker, New Zealand Pharmacy Conference, Auckland, April 1987.
 - *The pharmacist and therapeutic drug monitoring*. Topics in Therapeutics Symposium. Department of Pharmacology, University of Auckland, October 1986.
 - *A potential future for hospital pharmacy in New Zealand*. Opening conference address "New Zealand Hospital Pharmacists Association 34th Annual Conference", Gisborne, October 1986.
 - *Hepatic extraction of drugs*. Department of Pharmacy, University of Queensland, Dec 1985.
 - *Diffusion theory in pharmaceutical sciences*. Department of Pharmacy, University of Sydney, May 1985.
 - *Modelling hepatic drug disposition*. Gastroenterology Department, Austin Hospital, Oct 1985.
 - *Commentary on hepatic drug disposition*. "Drugs and the Liver Symposium", St Vincent's Hospital, 1985.

Local

Invited lecturer

- *Medical Research* Lions Convention Hervey Bay, Qld 25 October 2008
- *Better Management of Medications* Public Lecture for PA Foundation; Princess Alexandra Hospital, November 20, 2007.

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- *Personalised Medicine* Frontiers of Biotech Session for “Women In Biotech Symposium”, Brisbane Convention Centre 25 October 2007.
 - *Pharmacokinetics*. Queensland University of Technology Oct 3, 2007.
 - *A multiphoton approach to therapeutics* The 47th Annual PAH Week Research Symposium - State Of The Art At Pah: Cutting Edge Technology In Clinical & Translational Research Monday 20 – Friday 24 August 2007.
 - *How do we recruit?* The 47th Annual PAH Week Research Symposium - State Of The Art At Pah: Cutting Edge Technology In Clinical & Translational Research Monday 20 – Friday 24 August 2007.
 - *Therapeutics – Making a difference*. Public Lecture for PA Foundation; Princess Alexandra Hospital, July 10, 2007.
 - *Therapeutics – Making a difference*. Princess Alexandra Hospital, Translational Research Symposia – tomorrow’s therapies today Aug 30, 2005.
 - *How to Succeed in Research*. UQ School Of Medicine Research Committee 2005 Seminar Series; Seminar I, Friday 27th May 2005 PAH Auditorium.
 - *Structure of xenobiotics and diseases on hepatic disposition* in workshop “Metabolism of Environmental Toxins”. EnTox, 39 Kessels Road, Coopers Plains, 14-16 December 2004.
 - *Mentorship*. UQ School of Medicine Retreat Brisbane, 11 October 2004.
 - *Pharmacokinetic considerations* in “Drug development for critical illness”. Critical Care Basic Science Symposium Brisbane, 20-22 August 2004.
 - *Medications, a hindrance or a help? Optimising medication management for older people*. “Carina and Districts Committee on the Ageing Annual General Meeting”, 13 May 2004.
 - *Transdermal research* in “Skin Research Networking Workshop”. Bardon Centre, Brisbane, 22 August 2003.
 - *Thrombostat* “BioLink Breakfast”. IMBcom, Queensland Bioscience Precinct, University of Queensland, 30 September 2003.
 - *Transdermal research*. “Queensland Skin Research Network Workshop”. (Qld Branch) 22-23 August 2003.
 - *Some formulation lessons learned through transdermal research*. Australian Society of Cosmetic Chemists (Qld Branch), 9 July 2003.
 - *Key Note Speaker*. Pharmaceutical Society of Australia (Qld) Annual Awards Evening, 24 April 2002.
 - *The quality use of medicines*. “Alcohol and Drug Foundation Queensland Conference”. Brisbane, 3-6 July 2000.
 - *Drugs in the elderly*. “Grand Rounds”. Princess Alexandra Hospital, Brisbane, May 2000.
 - *Quantitative outcomes of TEAMCare health coordinated care trial*, Brisbane North Division of General Practice, 13 April and 9 May 2000.
 - *Domiciliary medication care project*. Brisbane South Division of General Practitioners, July 1999.
 - *Developing a vision for quality use of medicines*. “Queensland Health Quality Use of Medicines Conference”. Brisbane, July 1999.
 - *Polypharmacy and other pharmacological dilemmas in chronic illness*. Plenary lecturer. “Merck, Sharpe and Dohme University Program for General Practitioners” Brisbane, July 1999.
 - *Diffusion and mass transport*, School of Pharmacy, University of Queensland, February 1999.

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- *Recent lessons in modelling pharmacokinetics*, School of Pharmacy, University of Queensland, July 1999.
 - *Clinical pharmacokinetics*. "Continuing education weekend for pharmacists", Pharmaceutical Society of Australia (Central Queensland Branch), July 1994.
 - *Facilitating transepidermal migration: Implications for non-invasive monitoring and drug delivery*. Perinatal Symposium, Brisbane, October 1993.
 - *How to write a pharmacy research proposal*. "Society of Hospital Pharmacists of Australia (Qld) State Branch Conference Brisbane", October 1992.
 - *Confusion, delirium and drugs – update in geriatric medicine*. The 1992 MSD Universities Programme Case Study Meetings, Brisbane, November 1992.
 - *Drugs in the elderly*. Australian Association of Gerontology (Qld division) Nambour, May 1991.
 - *Postgraduate hospital pharmacy training*. "20th Federal Conference of the Society of Hospital Pharmacists of Australia", Gold Coast, November 1991.
 - *Postgraduate hospital pharmacy*. "Society of Hospital Pharmacists of Australia (Qld) Annual Conference", October 1990.
 - *Pharmacokinetics and age*. "Continuing education weekend for pharmacists", Pharmaceutical Society of Australia (Central Queensland Branch), October 1990.
 - *Targeted drug delivery*. Otago University Pharmacology Department, October 1990.
 - *Hepatic elimination – some experimental and modelling view points*. Department of Biochemistry, University of Otago, April 1987.
 - *Are models really useful?* Department of Biochemistry, University of Tasmania, June 1987.
 - *Aspirin – an old drug with new tricks*. "Haematology, Immunology and Neoplasia Research Group Meeting", Hobart, June 1986.
 - *Vital pharmacokinetic concepts for anaesthetists*. Repatriation Hospital, Hobart, June 1986.
 - *Arthritis research in Tasmania*. "Rheumatism and Arthritis Foundation of Tasmania Public Meeting", Hobart, October 1985.
 - *Coughs and colds, skin disorders, communication and negotiation, and others*. "Continuing education programme for pharmacists" (Pharmaceutical Society of Tasmania), 1976-1985.
 - *Concepts in clinical chemistry/clinical pharmacology* for Australian Association of Clinical Biochemists (Tasmanian division), 1981-1985.

g) Postgraduate and Undergraduate Teaching

Completed higher degrees

- **Rumble R H, M App Sci (Pharm)**, Tasmanian College of Advanced Education 1980, "Pharmacokinetics of Salicylate During Chronic Administration and in Hepatic Disease", now Professor and Head in Pharmacy, Charles Darwin University.
- **Cossum P A, M Pharm**, University of Tasmania 1981, "The Availability of Organic Nitrates From Intravenous Delivery Systems", now Vice President, Preclinical Development Aronex Pharmaceuticals Inc Texas.

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- **Cossum P A, *PhD***, University of Tasmania 1985, “Pharmacokinetics and Pharmacodynamics of Aspirin and Nitroglycerin”, now Vice President, Preclinical Development, Aronex Pharmaceuticals Inc Texas USA.
 - **Kowaluk E, *PhD***, University of Tasmania 1985, “The Kinetics of Sorption of Solutes by Plastic Intravenous Delivery Systems”, Co-supervisor Dr A Polack, now Research Scientist, Pharmaceutical Products Division, Abbott Laboratories, IL USA.
 - **Owen S G, *PhD***, University of Tasmania 1986, “Response to Drug Treatment in Rheumatoid Arthritis”, Co-supervisor Dr W Friesen, current position unknown (last position with Glaxo Smith Kline).
 - **Rumble R H, *PhD***, University of Tasmania 1986, “Effect of Posture and Sleep on Pharmacokinetics”, now Professor and Head in Pharmacy, Charles Darwin University.
 - **Siddiqui O, *PhD***, University of Tasmania 1987, “Strategies for Optimising Percutaneous Absorption”, Co-supervisor Dr A Polack, now Regulatory Affairs Manager, Sigma Pharmaceuticals, Clayton Vic Australia.
 - **Mutlib A, *M Pharm***, University of Otago NZ 1989 (awarded with distinction), “Drug Delivery for Disorders of the Mouth”, now Manager, Bristol, Myer & Squibb, New Zealand.
 - **Wagner A, *M Med Sci***, University of Tasmania 1990, “Physiological Determinants of Drug Distribution and Metabolism in Perfused Organs”, current position, TGA, Canberra.
 - **McLintock A D, *M Pharm (Clin)***, University of Otago 1991, “An Investigation of a Novel Warfarin Maintenance Dose Prediction Method”, current position unknown (last position Clinical Pharmacist, Timaru Hospital).
 - **Mellick GM, *PhD***, University of Queensland 1996, “Disposition of Solutes in the Perfused Rat Liver”, now Associate Professor, Griffith University, Queensland
 - **Shen J, *PhD***, University of Otago 1991, “Clinical Pharmacokinetics in Pre-Eclampsia”, other supervisor Dr S Wanwimolruk, now Scientific Affairs Manager, Apotex New Zealand.
 - **Singh P, *PhD***, University of Queensland 1993, “Structure-Activity Considerations in Percutaneous Absorption”, now Senior Scientist, Novartis Pharmaceuticals Corporation, New York USA.
 - **Yoshida N, *PhD***, University of Queensland 1993, “Iontophoretic Delivery of Drugs”, now Quality Manager, Bayer Yakuhin Research Centre, Kyoto, Japan.
 - **Wu Z, *PhD***, University of Queensland 1997, “The Pharmacokinetics and Pharmacodynamics of Melphalan in Isolated Perfused Limbs in the Treatment of Malignant Melanoma”, now Chief Executive Officer of a Medical Products Company in China.
 - **Arab H, *PhD***, University of Queensland 1998, “Mechanisms of Liver Ischaemia - Reperfusion Injury and treatment”, Associate supervisors: Dr Hickman, Dr Cheung & Dr Potter, now Head of Pharmacology in Veterinary Medicine, University of Tehran, Iran.
 - **Anissimov Y, *PhD***, University of Queensland 1998, “Modelling of Solute Uptake in Isolated Organs”, other supervisor Prof A Bracken, now Senior Lecturer, Griffith University, Queensland.

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- **Jiang R, PhD**, University of Queensland 1998, "Effect of Formulation Vehicle on Skin Permeation of Sunscreen Agents", other supervisor Dr H Benson, now Senior Scientist, QPharm, University of Queensland, Qld.
 - **Hung D, PhD**, University of Queensland 1998, "Targeting Drug Delivery using Physiological Transport Processes and Appropriate Chemical Design", Associate Supervisor Dr RJ Pranker, now retired.
 - **Lai P, PhD**, University of Queensland 1999, "Pharmacological Approaches to Ophthalmic Disorders", Associate Supervisor Prof L Hirst, now Senior Research Scientist, Glaxo Smith Kline, New Jersey, USA.
 - **Megwa S, PhD**, University of Queensland 1999, "Transdermal Drug Delivery: Application of the Ion-pair Concept to Salicylate Delivery", Associate Supervisor Dr H Benson, now Business Manager, ADEC (Pharm).
 - **Rasiah R, PhD**, University of Tasmania 1999, "Transport as Assessed by Placental Multiple Indicator Dilution Studies", Associate Supervisor Prof R Mortimer, now Senior Lecturer in Pharmacy, James Cook University, Townsville Qld.
 - **Foster K, PhD**, University of Queensland 2000, "Pharmacokinetic Studies in the Head", Associate Supervisor Prof PB Colditz, now Scientist, Research and Surgery Services, Durham Veterans Affairs Medical Center, Neurosurgery and Neurobiology, Duke University Medical Center, USA.
 - **Lynne T, PhD**, University of Queensland 2001, "Impact of a Multidisciplinary Team Approach to Pharmaceutical Care on Outcomes for Elderly Residents in Long-Term Care Facilities", now Deputy Head of Pharmacy, Mater Hospital.
 - **Kanakavi O, PhD**, University of Queensland 2002, "Surfactant Protein Location and Composition", Associate Supervisors Prof B Hills and Dr P Kroon, now Lecturer, Burdur Faculty of Veterinary, Akdeniz University, Turkey.
 - **Chang Ping, PhD**, University of Queensland 2002, "Quantitative Evaluation of Hepatic Morphological Alterations and Pharmacokinetic Changes of Cationic Drugs in Fibrosis-inducing Hepatic Diseases", other supervisor Dr D Hung, now NHMRC Research Officer, University of Queensland.
 - **Hayden CJ, PhD**, University of Queensland 2002, "Effect of Chemical Structure on the Absorption of Sunscreens", other supervisor Dr H Benson, now Pharmacist, Wesley Hospital, Brisbane.
 - **Sorensen L, PhD**, University of Queensland 2002, "A Comparison of the Appropriateness of Psychotropic Drug and Polypharmacy Use in Mental Health, In Institutionalised Patients and in the Community", now Pharmakon, Milnersvej 42, 3400 Hillerod, Denmark.
 - **Stokes J, PhD**, University of Queensland 2003, "Quality of Medication Care in Long Term Care Facilities: Assessment of Process, Needs and Type of Intervention", now Research Officer, TRU (my group), University of Queensland.
 - **Peachey K, PhD**, University of Queensland 2004, "Community Pharmacy Interventions for Quality Medication Care", Associate Supervisor Prof M Sheehan, now Community Pharmacy Manager.

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- **King M, PhD**, University of Queensland 2004, “Medication Care: Databases, Drug Use and Economics”, Associate Supervisors Dr Do and Dr Doessel, now Senior Lecturer in Pharmacy, Griffith University.
 - **Craft J, PhD**, Queensland University of Technology 2004, “Potential Involvement of Platelet-derived Microparticles During Percutaneous Transluminal Coronary Angioplasty”, Principal Supervisor Prof Neville Marsh, now Postdoctoral Fellow and support, TRU (my group), University of Queensland.
 - **Gol-Mohamadi A, MMedSci**, University of Queensland 2005, “Targeted Drug Delivery”, Associate Supervisor Dr S Cross, now Community Pharmacy Owner.
 - **Siebert G, PhD**, University of Queensland 2005, “Disposition Pharmacokinetics of Drugs and Solutes in Perfused Organ Systems”, other supervisors Dr D Hung and Dr S Cross, now Research Officer), University of Queensland.
 - **Mo Y, PhD**, University of Queensland 2005, “Surfactant Protein Distribution and Function in Human Skin”, other supervisors Dr Sheree Cross, Dr P Masci, Dr G Mellick.
 - **Pennisi R, MMedSci**, University of Queensland 2005, “Iontophoresis of the Nail”, other supervisor Dr Sheree Cross.
 - **McFarlane B, PhD**, University of Queensland 2006, “Axoplasmic transport and transdermal iontophoresis: factors in neurogenic pain management”, other supervisor Dr S Cross, now Community Pharmacy Owner.

Submitted higher degrees

Current higher degree supervision

- **Chapman J, PhD**, University of Queensland (part-time), “Value Added Services in Pharmacy”, other supervisor Dr D Collins.
- **Dissanayaka N, PhD**, University of Queensland, “Depression in Parkinson’s Disease: Assessment Methods and Risk Factor Analysis”, Principal Supervisor Dr George Mellick, Associate Supervisors Dr John O’Sullivan and Prof Peter Silburn.
- **Fanning K, PhD**, University of Queensland, “Drug Disposition in the Pancreas”, other supervisors Dr Daniel Hung, Prof John Prins., now Analytical Biochemist, Queensland Department of Primary Industries.
- **Kruger P, PhD**, University of Queensland, “Evaluation of Drug Kinetics and Body Fluid Disposition in Critically Ill Patients with Sepsis”.
- **Newton K, PhD**, University of Queensland (part-time), “Pharmacokinetics and Pharmacodynamics of Central Nervous System Depressants”, Associate Supervisor Prof G Graham.
- **Ranasinghe K, PhD**, University of Queensland, “Pharmacokinetics and Pharmacodynamics of Antibiotics in Burns and in Sepsis”, Dr Sheree Cross, Assoc Prof Bala Vengatesh.
- **Li P, PhD**, University of Queensland, “Role of transporters in the hepatic drug uptake and intrinsic clearance as determinants of drug disposition during the progression of liver disease”.

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- **Ahmed A, PhD**, University of Queensland, “Skin photoaging”.
 - **Kaur S, PhD**, University of Queensland, “Role of Medication Review at End of Life”. Associate Supervisors Assoc Prof Luis Vitetta, Assoc Prof Geoff Mitchell, Jason Roberts.
 - **Zhang Q, PhD**, University of Queensland, “Effects of physiochemical properties of solute on their penetration through skin”.

PhD examiner

- Banaras Hindu University, Varanasi, India, Doctor of Philosophy 1995
- Flinders University of South Australia, Master of Science 1985
- Massey University NZ, Master of Science 1988
- Monash University, Master of Pharmacy 1995
- Monash University, Doctor of Philosophy 2004, 2006
- South Australian Institute of Technology, Master of Applied Science (Pharmacy) 1988
- University of Melbourne, Doctor of Philosophy 1989, 1998
- University of Otago, BMedSci 1989, PhD 2007
- University of Queensland, Master of Pharmacy 1985
- University of Queensland, Doctor of Philosophy 1990, 1994, 1999
- University of Singapore, Doctor of Philosophy 2002
- University of South Australia, Doctor of Philosophy 1995
- University of Sydney, Doctor of Philosophy 1987, 2000, 2002, 2004
- University of Tasmania, PhD thesis 1996
- University of Western Australia, Bachelor of Science(Hons) 1991
- University of Western Australia, Doctor of Philosophy, 1998, 1999
- Victorian College of Pharmacy, Master of Pharmacy 1979, 1982, 1985, 1988, 1995

Visiting Examiner

- University of Otago, School of Pharmacy, Sept - Oct 1990

Course coordinator/administration/ teaching in undergraduate and postgraduate pharmacy

UNIVERSITY OF QUEENSLAND:

- Research Methods in Pharmacy
- Good Manufacturing Practice and Hospital Systems
- Clinical Pharmacokinetics and Clinical Pharmacy

UNIVERSITY OF OTAGO:

- Clinical Pharmacokinetics at undergraduate and postgraduate levels

UNIVERSITY OF TASMANIA:

- Community Pharmacy Practice
- Clinical Pharmacokinetics
- Introduction to Drug Action and Properties of Drugs

TEACHING ADMINISTRATION: Timetabling and room scheduling, student interviews and selection, examination coordination, liaison with externship supervisors, preparation of video tapes, books and pamphlets marketing courses and the Departments.

Other Undergraduate and Postgraduate Teaching

- *Clinical pharmacology and therapeutics* for Undergraduate MB BS (Universities of Tasmania, Otago and Qld)
- *Clinical Pharmacology for Anaesthetics* Registrars FAARCS examination; Royal Hobart Hospital 1980-1985, Otago Hospital Board, 1988-1989
- *Clinical Pharmacology for Physician Registrars* FRACP examination; Otago Hospital Board, 1988-1989
- *Clinical Pharmacology for Psychiatric Registrars* Fellowship examination; Royal Hobart Hospital 1980-1985
- *Pharmacology* for undergraduate and postgraduate nursing programmes (Royal Hobart Hospital) 1977-1980

g) Administrative Responsibilities

- Director of Therapeutics Research and Quality Medication Care Groups, Department of Medicine, University of Queensland, 1992-
- Chairman, Animal Experimentation Committee for the University of Queensland (policy committee for all animal studies at the University), 2004
- Chairman, Group 5 Animal Experimentation Committee for the University of Queensland - (this committee overviews animal experimentation in for the Faculty of Health Sciences and Brisbane teaching hospitals (Royal Brisbane, Princess Alexandra, Prince Charles, Mater, Greenslopes), 1992-2003
- Chairman, Management Committee for postgraduate clinical pharmacy courses in Queensland (Committee has representatives from academia, government and the profession), Department of Pharmacy, University of Queensland, 1990- (Convenor, 1989) Courses offered:- Grad Cert Clin Pharm, Grad Dip Clin Pharm, M Clin Pharm, D Clin Pharm
- Member, Princess Alexandra Hospital and District Research Committee, 1999-
- Member, University of Queensland School of Medicine Research Committee 2002-
- Member of the University of Queensland School of Pharmacy Board of Studies, 1996-
- Member, Selection Committee, Consultant Veterinary Officer, University of Queensland, 2002
- Member, Selection Committee, Coordinator of Animal Welfare Unit, University of Queensland, 2002

Other

Administered two World Health Organisation Research Training Grants

h) Peer Review

Associate Editor

- Elected for Skin Pharmacology and Applied Physiology 2002-

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- Section Editor for “Skin diseases” in Drug Discovery Today: Disease Mechanisms (IF 7.8, highest impact of drug discovery journals)

Editorial Board

- Elected to Editorial Board of Journal of Pharmaceutical Sciences (USA) 1993-1995
- Elected to Editorial Board of Chinese Journal of Clinical Pharmacology and Therapeutics 2006-
- Elected to Editorial Board of Journal of Pharmacokinetics and Biopharmaceutics 2000-2002
- Elected to Editorial Board of Journal of Pharmacokinetics and Pharmacodynamics 2003-2008
- Elected to Editorial Board of Current Drug Delivery 2003-
- Elected to Editorial Board of Clinical Pharmacokinetics 2003-
- Elected to Editorial Advisory Board of Pharmaceutical Research 2006-2008
- Elected to Editorial Board of Drug Metabolism & Pharmacokinetics 2007-
- Elected to The Open Drug Delivery Journal 2007-

NHMRC Responsibilities

- Member, National Health & Medical Research Council Regional Interviewing Committees: Melbourne 1994, Sydney 1995, Adelaide 1996, Adelaide 1997.
- Member, National Health & Medical Research Council Program Grant Interviewing Committee: Melbourne 1999.
- Member, National Health & Medical Research Council Grant Panels: Canberra 2000, 2001, 2002, 2003, 2005, 2006, 2007.
- Member of NHMRC Advisory Committee on Health & Nanotechnology 2007-9
- Member, National Health & Medical Research Council Grant Review Panel (GRP) Selector Committee, 2008.

Commonwealth Responsibilities

- Elected Member, Pharmaceutical Subcommittee (PSC) of the Australian Drug Evaluation Committee (ADEC) from 2004 -2009.

Grant Application Reviews

- Auckland Medical Research Foundation 1986, 1988, 1990
- Australian National Health and Medical Research Council Research Projects 1983- (yearly)
- Australian National Heart Foundation & Cancer Fund Projects 1985- (every second year)
- Australian Research Grants Committee Projects 1988- (every second year)
- Commonwealth Department of Health and Ageing, General Practice Evaluation Branch 1999-
- Commonwealth Department of Health and Ageing, Pharmaceutical Benefits Projects 1992- (every second year)
- Evaluator of NDF4 Drug Submissions for the Australian Department of Health, Canberra 1977-1984
- Hong Kong University Grants Committee 2000-
- PPP (UK) 2002
- Israel Academy of Sciences and Humanities 1990, 1991

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- National Heart Foundation 2001
 - New Zealand Medical Research Council 1986- (every second year)
 - Raine Medical Research Foundation at the University of Western Australia 1999
 - University of Queensland Special University Grants 1985
 - Welcome Trust 1998, 1999, 2000
 - Royal Children Hospital Research Project Grants 1999-
 - US Department of Health & Human Services, National Institute of Occupational Safety and Health 2006.

Applications for Academic Promotion

- 3 review for appointment to Professor and Dean of Faculty
- 6 reviews for promotion to full Professor plus 1 for promotion to NHMRC SPRF
- 11 reviews for promotion to Associate Professor (1xNZ, 3xUK, various Australian states)

Referee for Scientific Journals

- Age & Ageing 2001-
- Arch Dermatol Res
- Audiology & Neurotology 2006
- Australian Journal of Pharmaceutical Sciences 1977-1982
- British Journal of Clinical Pharmacology
- Clinical and Experimental Pharmacology and Physiology 2004, 2005
- Clinical Pharmacokinetics 1988 - 1 every second year
- Current Drug Delivery
- Drugs & Ageing 1999 (1)
- Expert Opinion Drug Del
- Food and Chemical Toxicology 2006
- Internal Medicine Journal
- International Journal of Pharmaceutics
- Journal of Pharmacokinetics and Pharmacodynamics
- Journal of Pharmacy and Pharmacology
- Journal of American Academy of Dermatology 2000 (1)
- Journal of Chromatography, Biomedical Applications 1983- (1-2 per year)
- Journal of Investigative Dermatology
- Journal of Pharmaceutical Sciences 1986- (4 -6 per year)
- Journal of Pharmacokinetics and Biopharmaceutics 1983- (2-3 per year)
- Journal of Pharmacology and Experimental Therapeutics 2003, 2004
- Journal of Pharmacy and Pharmacology (4-6 per year)
- Medical Journal of Australia 1998- 1 for each of 1998 and 1999
- Pharmaceutical Research 1988- (4 -6 per year)
- Pharmacol Res
- Physics Journal

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- Skin Pharmacology and Skin Physiology

i) Scientific Discipline Involvement

Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists

- Member of organising committee, Australian Society of Clinical and Experimental Pharmacologists and Toxicologists, Brisbane, December, 1994
- Member of Discipline subcommittee on drug metabolism and drug delivery.
- Convenor and chairman of session on pharmacokinetics for Australian Society of Clinical and Experimental Pharmacologists and Toxicologists, Hobart, December, 1998 meeting
- Invited speaker to Conferences in Adelaide 1995 and Melbourne 1996 (see (e))
- Regular attendee (11 presentations from group at Sydney meeting in 1999)
- Councillor and Director 2000-2001

Perspectives in Percutaneous Penetration Conferences

- Member, Scientific Advisory Board, 10th International Conference, Perspectives in Percutaneous Penetration, La Grande Motte, France April, 2007
- Member, Scientific Advisory Board, 9th International Conference, Perspectives in Percutaneous Penetration, La Grande Motte, France April, 2006
- Member, Scientific Advisory Board, 9th International Conference, Perspectives in Percutaneous Penetration, La Grande Motte, France April 2-5, 2004
- Member, Scientific Committee, 8th International Conference, Perspectives in Percutaneous Penetration, Antibes Juan-les-Pins, France April 2-5, 2002
- Member, Scientific Committee, 7th International Conference, Perspectives in Percutaneous Penetration: La Grande Motte France, April 2000
- Member, Scientific Committee, 6th International Conference, Perspectives in Percutaneous Penetration: Leiden Holland, August 1998
- Member, Executive Scientific Committee, 4th International Conference, Prediction of Percutaneous Absorption: Methods Measurements Modelling, Montpellier, France, April 1995
- Member, Scientific Committee, 3rd International Conference, Prediction of Percutaneous Absorption: Methods Measurements Modelling, Montpellier, France, April 1993
- Chairman of sessions in 1993, 1995, 1997 and 1999 (see (e))
- Invited speaker in 1989, 1991, 1995 and 1999 (see (e))

Pharmaceutical Science World Congress (PSWC)

- Member of Program Committee for 3rd Conference to be held in Leiden 2007
- Chairman of session for 2nd Conference held in Kyoto 2004

Controlled Release Society

- Member since 1986
- Invited speaker to Amsterdam 1991
- Invited speaker to Las Vegas 1998

Gordon Conference – Barrier Properties of Mammalian Skin

- Chairman – Debate on liposomal transport 1992
- Speaker in Debates: 1994, 1996 and 1999 (see (e))

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- Co-vice Chair, 2005
 - Co-Chair, 2007

Australasian Society of Pharmaceutical Science

- President 1980-1984
- Chairman of research sessions 1981, 1982, 1984, 1986
- Various presentations

World Health Organisation

- ***International Program on Chemical Safety***. Elected Chairman of Taskforce to write Environmental Health Criteria on dermal absorption at WHO/IPCS meeting in Hanover in July 2005 (11 members, 2 USA, 7 Europe, 2 Aust (1 TGA))

Scientific Committee for Consumer Products

- Guest member in Brussels July 2005 in developing guidelines for dermal absorption

Australian Rural Industries Research Development Corporation

- Leader of Task Force advising on scientific issues related to registration of tea tree oil in Europe - making representations on their behalf to European authorities.

Other Scientific Societies

- Inaugural Member, Management Committee, Skin BioSciences Association (other 4 members from UK, USA and France) formed in 1995
- Member, Executive Committee, Cutaneous Microdialysis Club, 1998-
- Inaugural Member, International Society of Skin Pharmacology and Physiology (ISP)
- Member, American Association of Pharmaceutical Scientists (AAPS)

Pharmacy, Clinical Pharmacology and related Professions – Chairman of committees or senior consultant

- Member of NHMRC Advisory Committee on Health & Nanotechnology 2007-9
- Member of Australian Government's Advisory Group on Chemical Safety 2006-8
- Assessed quality of research in the pharmacy at the University of Tasmania for their DVC (Research) 2006
- Peer Group Consultant, Health Canada, Risk Assessment of Topical Household Products, March 7-8, Ottawa, Canada 2002
- Chairman, Committee to review Mental Health Pharmaceutical Services for the South Brisbane Hospitals Board, 1999
- Chairman, Education Committee, Australian Institute of Pharmacy Management 1998-
- Reviewer for the Fellowship of the Society of Hospital Pharmacists Program Part 2B 1995
- Member, Joint Consultative Working Party on Pharmacy Departments for Queensland Public Sector Health Service, 1992
- Chairman, Committee to review Pharmaceutical Services for the South Brisbane Hospitals Board, 1990
- Convenor, Committee to establish Masters degree in Hospital Pharmacy at the University of Queensland, 1989-1990 - Report accepted October, 1990

- Chairman of Judges, Stevens-New Zealand Pharmacy Awards for best community pharmacy, 1987, 1988
- Chairman, Pharmacy Department, University of Otago 1986-1989

Pharmacy, Clinical Pharmacology and related Professions – Committee roles

- Evaluator, Medication Management program for Commonwealth Department of Veterans' Affairs, 1996-
- Member of the Royal Australian College of General Practitioners' Reference Group for Best Practice Guidelines for the Management of Behavioural Disturbances in Residential Aged Care Facilities 1997-1998
- Member of the Academic Advisory Board for the Australian Association of Consultant Pharmacy 1997-2003
- Evaluator, Coordinated Care Trial of the Brisbane North Division of General Practitioners (TEAM CARE) Commonwealth Department of Health and Aged Care, 1998-2000
- Member of the Drug Committee and Clinical Trials Subcommittee, Royal Children's Hospital, Brisbane 1994-2004
- Assistant Editor, Australian Pharmaceutical Formulary and Handbook 15th Edition, 1992
- Member, Joint Consultative Working Party on Pharmacy Departments for Queensland Public Sector Health Service, 1992
- Member, Selection Committee, Queensland State Health for Adviser in Pharmacy, 1992
- Member of the University of Queensland Faculty of Medicine Board, 1989- 1996
- Assistant Editor, Australian Pharmaceutical Formulary and Handbook 14th Edition, 1988
- Member Medical Research Council (NZ) Standing Committee of Therapeutic Trials (SCOTT) (Committee evaluates and approves all clinical trials on behalf of the NZ Department of Health), 1987-1989
- Committee member, Dunedin Centre for Drug Development - Group set up to encourage coordination and sponsorship of pharmacology research at the University of Otago, 1988-1990
- Committee member, Otago Pharmacological Association, 1987-1989
- Member, University of Otago Senate, 1986-1989
- Department representative Faculty of Science University of Otago, 1986-1988
- Co-opted member of committee chosen to propose guidelines for a new degree in Medical Laboratory Technology (curricula, format, staffing etc) at Otago, 1988-1989

Pharmacy and Pharmacology – Scientific Society Memberships

- American Association of Pharmaceutical Scientists (AAPS)
- Australian Pharmaceutical Science Association (APSA)
- Cutaneous Microdialysis Club (Foundation Board Member)
- Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists (ASCEPT)
- Controlled Release Society (CRS) (International Society for Drug Delivery Scientists)
- International Skin Pharmacology (ISP) - Vice President

Pharmaceutical Industry – Consultancies

- Sandoz, Switzerland 1983-1984 Recommendation sought for product withdrawal
- New Zealand Audit Office on Pharmaceuticals Standards 1990
- Pfizer New Zealand 1988-1990 Product Registration

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- F.H. Faulding 1983-1986 New Product Development
 - Douglas Pharmaceuticals New Zealand 1986-1989 Product Design and Clinical Trials
 - Evans Pharmaceuticals New Zealand 1986-1989 Clinical Trials
 - Pharmol Australasia 1988-1989 Evaluation of New Drug Projects
 - Smith, Kline & French, New Zealand & Australia 1983-1989 Product Registration, Patent Extension.
 - Lead Association of Australia 1990 Referee for Proposal on Lead Toxicity
 - Hamilton Laboratories, 1990-1991 Research on Formulation Development
 - Wille Laboratories 1993 Research on Formulation Development
 - Biotech Australia 1995 Research on Formulation Development
 - Delta Ltd (Iceland) 1996
 - Whitehall International (UK) 1996
 - Mt Romance (WA) 1996
 - Dept. Agriculture, WA 1996
 - Reckitt & Colman 1997 Research on Formulation Development
 - Ego Pharmaceuticals 1999
 - Schein – Bayer 1999
 - Soltec (Division of FH Fauldings) 1999, 2000
 - Herron Pharmaceuticals 1998-
 - FH Faulding 1999
 - CSIRO 1999
 - Headstart, QLD Transdermal product assessment. 1999
 - Nang Kuang Pharmaceutical Company (Taiwan) 1999
 - SolGel Technologies (Israel) 2000
 - Mt Romance, WA - Transdermal product assessment 2000
 - Thursday Plantation Laboratories, NSW - Transdermal product assessment 2000
 - International Laboratory Assessment Study – Skin Forum, UK – Artificial membrane penetration standardisation assessment across laboratories worldwide 2001
 - Assoc Prof Roger Martin, Peter MacCallum, University of Melbourne - Transdermal product assessment 2001
 - Norwood Abbey, NSW - Transdermal product 2002
 - Promics, VIC - Transdermal product assessment 2002
 - Eiffel Technologies, NSW - Transdermal product assessment 2002-
 - Connetics US - Transdermal product assessment 2003-
 - GroPep Ltd, South Australia 2004-
 - Mallesons Pty Ltd (Patent attorneys) regarding patents;
 - Sirtex Pty Ltd advice on pharmaceutical chemistry for a new compound
 - CTF A 2006 (SCCP homosalate opinion at http://ec.europa.eu/health/ph_risk/committees/04_sccp/docs/sccp_o_097.pdf accepted many of the arguments that put forth in my review (see the Discussion section 3.3.14)).

Independent Expert Witness

- Federal Court of Australia V214 (Mallensons Stephen Jaques) – Patent case on photodynamic therapy 2004.

j) Wider community
Presentations on medical research

- Presentations to Lions Medical Research Foundation on Sunday mornings in February (Miss Personality) and in July (Board of Governors) every year since 1989 as
 - a speaker on our research achievements
 - demonstration of our research by a tour of our laboratories and comments by my staff
- Presentations on Medical Research to Lions Conferences in Orange (NSW) and Roma (Qld) and in 2000 Bribie Island (Q3) and Atherton (Q2)
- Presentations to individual Lions clubs e.g. Lions Aspley/Ashgrove 2004 and assistance to them in giving interviews on medical research for local suburban newspapers
- Appearances on television for PAH Research Foundation about research occurring at PAH
- Responsive to queries from Courier Mail and Sydney Morning Herald on queries concerning medicines, cosmetics, sunscreens and quality medication care issues
- Presentations to organisations as requested e.g. RBWH Auxiliary Brisbane 2004; Carina & Districts Committee on the Aging 2004

Promotion of health issues in the wider community

- Promotion of improved medication use through education in institutions and in the community (health professionals and consumers)
- Advising other organisations on research issues and health care service delivery models

Promotion of opportunities for employment of graduates***Company Directorships***

- Adbase Pty Ltd, 1993-
- Imaginot Pty Ltd 2000-
- Interderm Pty Ltd, 1995-
- MSR Consulting 1995-
- Quality of Medication Care Pty Ltd, 1995-
- Thrombostat Pty Ltd 2003-

Presentations on NHMRC grant writing, responses etc

- Present a researcher's perspective to complement that from UQ admin officers in advising the PAH research community on points in writing NHMRC applications and in making – yearly since about 2000
- Occasional presentations to the UQ community on recommendations in making rejoinders to NHMRC assessors comments

Section C – Research Support***1. NHMRC Research Support*****a) Past support**

- NHMRC (#351519): *Management of burn injury: fluid dynamics and antibiotic pharmacokinetics.* (with S Cross, B Vengatesh and J Lipman) 2005-2007 \$337,500.

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- NHMRC (#351410): *Targeted drug delivery by topical application*. (with S Cross and Y Anissimov) 2005-2007 \$529,500.
 - NHMRC (#143137): *Continuing Research Fellowship*. 2002-2005 \$582,250 (Includes NHMRC #252903 Fellowship Support Enhancement Option awarded in 2003).
 - NHMRC (#252871): *Effect of liver pathophysiology on hepatic pharmacokinetics* (with D Crawford) 2003-2005 \$435,000.
 - NHMRC (#142914): *Targeted drug delivery by topical application*. (sole chief investigator) 2001-2004 \$950,000.
 - NHMRC Equipment Grant: *Microarray*. (Partner with I Frazer (Chief), G Fernando, G Leggatt, D Gill, R Tindle) 2004 \$97,500.
 - NHMRC (#210156): *Extracellular acidosis and pH-modulating drugs as novel therapies for neuroprotection in hypoxia/ischemia in the newborn*. (with Prof P Colditz, Prof P Gluckman and Dr C Burke) 2002-2004 \$450,000.
 - NHMRC (#210259): *Iron metabolism and the cirrhotic liver: studies on iron absorption and hepatic iron kinetics*. (with A/Prof D Crawford, Dr L Fletcher, Prof L Powell) 2002-2004 \$255,000.
 - NHMRC (#9937600): *Modelling solute and metabolite disposition kinetics in perfused liver*. (sole chief investigator) 1999-2001 \$379,488.
 - NHMRC (#981314): *Treatment of recurrent malignant melanoma by limb infusion of cytotoxic drugs and other techniques*. (with A/Prof BM Smithers, A/Prof J Thompson and A/Prof C Anderson) 1998-2000 \$273,453.
 - NHMRC (#961186): *Function and regulation of fatty acid binding proteins in the liver*. (with Prof Susan Pond) 1997-1998 \$185,190.
 - NHMRC (#971047): *Targeted drug delivery by topical application*. (sole chief investigator) 1997-2001 \$1,073,793.
 - NHMRC (#961216): *Modelling solute and metabolite disposition in the perfused liver*. (sole chief investigator) 1996-1998 \$256,767.
 - NHMRC (#941027): *Effects of hemodynamic and structural changes on drug disposition in the placenta*. (with Prof RH Mortimer) 1996 \$48,299.
 - NHMRC (#941155): *Targeted drug delivery by topical application*. (sole chief investigator) 1994-1996 \$460,458.
 - NHMRC (#930388): *Solute structure and physiological modelling of hepatic elimination*. (sole chief investigator) 1993-1995 \$291,585.
 - NHMRC (#910462): *Targeted drug delivery by topical application*. (sole chief investigator) 1991-1993 \$370,134.
 - NHMRC: *Physiological modelling of hepatic elimination*. (sole chief investigator) 1990-1992 \$388,290.
 - NHMRC: *Gamma counter* (with Prof S Pond) 1990 \$28,460.
 - NHMRC: *Hepatic haemodynamics and drug clearance*. (sole chief investigator) 1985-1987 \$215,880.
 - NHMRC: *The kinetics of solute accumulation and diffusion in selected membranes*. (with Dr A Polack) 1980-1981 \$30,212.
 - NHMRC: *The kinetics of solute accumulation during transfer across polyethylene and polyvinylchloride membranes and human stratum corneum*. (with Dr A Polack) 1979 \$8,464.

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- NHMRC: *Absorption of drugs through the skin*. (sole chief investigator) 1977 \$7,380.

b) Currently held grants

- NHMRC (#569694): 569694 *Toxicology of Nanomaterials* (with Prof Rod F Minchin, Dr Darren J Martin, Dr Suzanne V Smith, A/Pr Michael J Monteiro, A/Pr Lawrence R Gahan, \$1,811,547 2009-2014
- NHMRC (#569710): 569710 *Pharmacodynamics in Liver Disease and in Liver Surgery* (with Prof Michael Weiss, A/Pr Graeme Macdonald, Dr Jonathan Fawcett, A/Pr Luis Vitetta, Dr Linda M Fletcher) \$865,777 2009-2011
- NHMRC (#2008000204): Equipment Grant *Improved quantification of spatial and temporal changes in plasma and tissue drug levels and tissue pathology* 2008 \$110,000.
- NHMRC (#519702): *Antibiotic dosing in the "at risk" critically ill patient* (with Prof Jeff Lipman, Prof David Paterson, Dr Carl Kirkpatrick, Dr Peter Kruger, Mr Jason Roberts) 2008-2010 \$589,000.
- NHMRC (#519703): *Targeted delivery by topical application* 2008-2010 \$606,813.
- NHMRC (#436873): *A phase II randomised controlled trial of atorvastatin therapy in intensive care patients with severe sepsis* (with Dr Peter Kruger, A/Pr Balasubramanian Venkatesh, Prof Rinaldo Bellomo, A/Pr Karam Kostner, Prof David Cooper) 2007-2009 \$603,825.
- NHMRC (#401702): *Pharmacokinetics and liver vascularity*. (with D Hung and D Crawford) 2006-2008 \$481,500.
- NHMRC (#401505): *Continuing Research Fellowship*. (Includes NHMRC Fellowship Industry Support Enhancement) 2006-2010 \$782,500.

2. Research Support from Other Sources

a) Past support – for previous six years

- Co-recipient NIH (National Institute of Arthritis and Musculoskeletal and Skin Diseases) grant AR054985 in co-chairing Gordon Research Conference: Barrier Function of Mammalian Skin In Salve Regina, Rhode Island, August 2007.
- 2006 RBWH Foundation Research Grants *Estimation of Drugs, peptides and metabolites using HPLC-Mass-spectrometry-microdialysis*. Colditz PB, Roberts M. \$23,000.
- 2006 UQ Major Equipment and Infrastructure Grants *"In vivo multi-photon tomography of skin"* RIF MED PA 1-20-2213-01 Total \$331,620. Central contribution \$212,000, Faculty \$26,067, others \$73,000.
- Princess Alexandra Hospital Private Practice Trust Fund contribution of \$47,000 to the purchase of a 'multiphoton confocal microscope' 2006.
- Princess Alexandra Hospital Foundation. Block funding for Therapeutics Research Unit 2006, \$20,000.
- Australian and New Zealand College of Anaesthetists (ANZCA). *The biology of HMG CoA Reductase Inhibitors in patients with sepsis* (with P Kruger, B Venkatesh, K Kostner) 2006, \$30,000.
- The University of Queensland Major Equipment and Infrastructure Grant. *Estimation of drugs, peptides and metabolites using HPLC- Mass-spectrometry –microdialysis*. (Convenor and CIA with members of my TRU group, Centre for Immunology & Cancer Research, PAH Intensive Care Unit & RBWH Burns, Trauma and Critical Care Research Centre, Royal Brisbane and

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- Women's Hospital, University of Queensland, RBWH Perinatal Research Centre, Department of Diabetes and Endocrinology, PAH) 2005, \$263,236.
- PAH R&D Foundation *Development of an Experimental Intensive Care Facility* (with B Venkatesh & P Kruger) 2005, \$55,000.
 - UQ Research Development Scheme. *Dialysis-assisted Fibre-Optic Spectroscopy (DAFOS) for monitoring drug concentration in situ* (with A Zvyagin & Dr Y Anissimov) 2005, \$30,000.
 - University of Queensland. Major Equipment and Infrastructure Grant *Replacement of caging infrastructure and ancillary support equipment in the Biological Research Facility (BRF)*, Princess Alexandra Hospital. (with I Frazer, R, Thomas, T Gonda, M Brown, N Saunders, N MacMillan (Centre for Immunology and Cancer Research), Dr P Masci (TRU)) \$900,000 (most from DVC (Research) and Faculty of Health Sciences), 2005.
 - Thrombostat (with Dr D Hung) \$89,500.
 - Australian and New Zealand College of Anaesthetists (ANZCA). *Optimal antibiotic dosing in burns fluid dynamics and drug tissue pharmacokinetics*. (with Assoc Prof B Venkatesh, Prof J Lipman, Dr S Cross) 2005, \$40,000.
 - Pfizer Global R&D. *Improved targeting of drugs for hair loss* MS Roberts, SE Cross, YG Anissimov 2004-5, US \$209,570.
 - PAH Foundation *Block Grant* 2003, \$25,000.
 - Interderm *Topical formulation studies* 2003-2004, \$68,000.
 - Pharmacy Guild of Australia. *Wound care benchmarking in community pharmacy - Piloting a method of QA indicator development*. (with Dr Julie Stokes, Dr Sheree Cross, John Chapman and Greg Duncan) 2002-2003, \$75,000.
 - UQ Research Development Scheme. *Single pass whole body and isolated organ perfusion. New insights into determinants of pharmacokinetics and pharmacodynamics* 2000 \$34,446.
 - Wellcome Trust Equipment for Biomedical Research (062332). *NMR*. (with Istvan Toth, Maree Smith, Richard Pranker) 2001-2003, \$624,054.
 - University of Queensland Enabling Grant (ESEG and Mayne Bequest) *Liver pharmacokinetics*. 2002 \$100,000.
 - Lions Medical Research Foundation: Postdoctoral fellowship for K Foster – *Neuroprotection in the developing brain* 2000, \$45,000.
 - PA Hospital R&D Foundation. *Skin penetration and potential toxicity of sunscreen* 2001, \$10,000.
 - PA Hospital R&D Foundation. *Improving responses to regional perfusion chemotherapy in tumours*. (with M Smithers, J Thompson) 2001 \$10,000.
 - PA Hospital R&D Foundation. *The distribution and uptake of drugs – an international approach*. 2000 \$8,000.
 - PA Hospital R&D Foundation. *Neuroprotection in the developing brain*. (with Dr P Colditz) 1999 \$10,000.
 - Department of Health & Aged Care. *Domiciliary medication review project*. 1999-2000 \$370,600.
 - Queensland Cancer Fund. *Skin penetration and risk assessment of topical sunscreens*. (with Dr H Benson and Dr S Cross) 1999-2000 \$113,724.
 - Mayne Bequest Fund. *Transdermal local vasodilation in the treatment of clinical conditions related to regional perfusion impairment*. (with Dr S Cross) 1999 \$25,000.
 - ICI Australia. *Hepatic pharmacokinetics of diltiazem/hepazem in the dog*. (with Dr P Mills) 1998 \$40,500.

- Quality Medication Care Pty Ltd: *Quality of Medication Care Group support*. 1998-2004 \$1,449,363.
- Apex Foundation for research into intellectual disability. *Neuroprotection in the developing brain*. (with Dr P Colditz and K Foster) 2001 \$9,248.
- Pfizer Global R&D. *Predicting of drug structure determinants of percutaneous absorption* 2001-2004 \$738,144.

b) Currently held grants

- 2008 NICM 1610001, Prof L Vitetta, Prof P Komesaroff, Prof D James, Prof A Linnane, Prof M Roberts, Prof R Day, Dr E Tiralongo, *National Institute of Complementary Medicine Collaborative Centre for Transitional Preclinical and Clinical Research in Nutraceuticals and Herbal Medicine* (2008, \$660,000)
- 2008-2009 The Cancer Council Sponsored Research 519705 *Assessment of topically treated non melanoma skin cancers by sequential optical biopsies using multiphoton microscopy*, The Cancer Council Queensland \$160,000.
- 2008 UQ Major Equipment and Infrastructure Grant *Improved quantification of spatial and temporal changes in plasma and tissue drug levels and tissue pathology* 2008 \$60,000.
- 2007 Queensland Government Innovation Projects Fund grant *International Needle-free Vaccination alliance (INVax)* \$1,240,519 - the total project investment with partner funding \$3.5 million. M Kendall, I Frazer and M Roberts.
- 2007 UQ Major Equipment and Infrastructure Grant *Real-time Luminescence Lifetime Imaging System A Zvyagin, T Plakhotnik, P Meredith, T McIntyre, H Rubinsztein-Dunlop, M Lu, G Xu, MS Roberts* \$81,045.
- ARC Discovery DP0774647 Prof MA Kendall; Prof MS Roberts *Micronanoprojection patches for minimally invasive and targeted delivery of genes and drugs to skin cells: from concept to technology platform* 2007: \$220,000, 2008: \$245,000, 2009: \$210,000.
- 2007-2009 ARC LP0669663 Prof MS Roberts; Dr AV Zvyagin; Dr YG Anissimov; Dr R Govindarajan; Dr CJ Loy *Relationship between melanosome distribution and skin colour* \$200,000.
- 2007-2009 ARC LP0669667 Prof MS Roberts; Dr YG Anissimov; Dr R Govindarajan; Dr CJ Loy *Topical peptide delivery for cosmetic and therapeutic benefits* \$249,000.
- 2008-2009 AOARD - 084024 US Airforce Asian Office of Aerospace Research & Development (AOARD) *Dermal penetration of metal-based nanotaggants?* \$40,000

Section D – Publications**a) Refereed Journal Articles**

1. Xia CH, Sun JG, Hao HP, Wang GJ, Yan B, Gu SH, Zheng CN, Shang LL, Roberts MS. Quantitative Determination of Ophiopogonin D by Liquid Chromatography/Electrospray Ionization Mass Spectrometry and its Pharmacokinetics in Rat. *Planta Med.* 2008 Nov 13. [Epub ahead of print]
2. Rawlings AV, Matts PJ, Anderson CD, M.S. Roberts MS. Skin biology, xerosis, barrier repair and measurement. *Drug Discovery Today: Disease Mechanisms* 5 (2) 2008, e127-e136
3. Ahmed AH, Soyer HP, Saunders N, Boukamp P, Roberts MS. Non-melanoma skin cancers. *Drug Discovery Today: Disease Mechanisms* 5 (1) 2008, e55-e62
4. Alenius H, Roberts DW, Tokura Y, Lauerma A, Patlewicz G, Roberts MS. Skin, drug and chemical reactions *Drug Discovery Today: Disease Mechanisms* 5 (2) 2008, e211-e220
5. Kruger PS, Freir NM, Venkatesh B, Robertson TA, Roberts MS, Jones M. A preliminary study of atorvastatin plasma concentrations in critically ill patients with sepsis *Intensive Care Medicine* 2008 Dec 1 [Epub ahead of print]
6. Dalley AJ, Lipman J, Deans R, Venkatesh B, Rudd M, Roberts MS, Cross SE (2009) Tissue accumulation of cephalothin in burns: A comparative study by microdialysis of subcutaneous interstitial fluid cephalothin concentrations in burn patients and healthy volunteers. *Antimicrob Agents Chemother.* 53 (1) 210-215.
7. Zou YH, Yang Y, Li J, Wu Q, Li WP, Lu JT, Roberts M. (2008) Potential therapeutic effects of a traditional Chinese formulation, BJ-JN, on liver fibrosis induced by carbon tetrachloride in rats. *J Ethnopharmacol.* Dec 8;120(3):452-7.
8. Roberts MS, Roberts MJ, Robertson TA, Sanchez W, Thörling C, Zou Y, Zhao X, Becker W and Zvyagin AV. (2008) In vitro and in vivo imaging of xenobiotic transport in human skin and in the rat liver. *J Biophoton* 1(6) 478–493.
9. Park S, Ropella GEP, Kim SHJ, Roberts MS, Hunt CA. (2008) Computational Strategies Unravel and Trace How Liver Disease Changes Hepatic Drug Disposition. Computational Strategies Unravel and Trace How Liver Disease Changes Hepatic Drug Disposition. *J Pharmacol Exp Ther.* 2008 Oct 23. [Epub ahead of print]
10. Fanning KF, Anissimov YG, Roberts MS. Sulphonylurea Physicochemical-Pharmacokinetic Relationships in the Pancreas and Liver. *Journal of Pharmaceutical Sciences* 08-342.R1 Accepted 17 Oct 2008
11. Roberts JA, Roberts MS, Robertson TA, Dalley AJ, Lipman J. Piperacillin penetration into tissue of critically ill patients with sepsis – bolus vs continuous administration? *Crit Care Med* 2008 (accepted July 11th 2008)

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12. **Weiss M, Hung DY, Poenicke K, Roberts MS** (2008) Kinetic analysis of saturable hepatic uptake of digoxin and its inhibition by rifampicin. *Eur J Pharm Sci* 34(4-5):345-50.
 13. **Anissimov YA, Roberts MS** (2008). Diffusion modelling of percutaneous absorption kinetics: 4. Effects of a slow equilibration process within stratum corneum on absorption and desorption kinetics" *J Pharm Sci* Accepted 08-093.R1 on May 1 2008
 14. **Li P, Wang GJ, Li J, Zhang Q, Liu X, Khlentzos A, Roberts MS** (2008). The prediction of the hepatic clearance of tanshinone IIA in rat liver subcellular fractions: accuracy improvement. *Current Drug Metabolism*. 9, 39-45.
 15. **Yan L, Ropella GEP, Park S, Roberts MS, Hunt CA** (2008). Modeling and simulation of hepatic drug disposition using a physiologically based, multi-agent in silico liver. *PharmRes* 25: 1023-1036.
 16. **Roberts JA, Roberts MS, Robertson TA, Cross SE, Lipman J** (2008). A novel way to investigate the effects of plasma exchange on antibiotic levels - the use of microdialysis. *International Journal of Antimicrobial Agents*. Mar; 31(3):240-4.
 17. **Nohynek GJ, Dufour EK, Roberts MS** (2008). Nanotechnology, cosmetics and the skin: is there a health risk? *Skin Pharmacol Physiol*. 2008;21(3):136-49.
 18. **Cross SE, Southwell I, Russell M, Roberts MS** (2008) Human skin penetration of the major components of Australian tea tree oil applied in its pure form and as a 20% solution in vitro. *Eur J Pharm Biopharm* 69(1):214-22.
 19. **Cross SE, Roberts MS** (2008). Use of In vitro human skin membranes to model and predict the effect of changing blood flow on the flux and retention of topically applied solutes. *J Pharm Sci* 97(8):3442-50.
 20. **Atrux-Tallau N, Pirot F, Falson F, Roberts MS, Maibach HI** (2007). Qualitative and quantitative comparison of heat separated epidermis and dermatomed skin in percutaneous absorption studies. *Arch Dermatol Res*. Dec; 299(10):507-511.
 21. **Winckle G, Anissimov YG, Cross SE, Roberts MS** (2008). An integrated pharmacokinetic and imaging evaluation of vehicle effects on solute human epidermal flux and, retention characteristics. *Pharm Res*. Jan; 25(1):158-66.
 22. **Dalley AJ, Lipman J, Venkatesh B, Rudd M, Roberts MS, Cross SE** (2007). Inadequate antimicrobial prophylaxis during surgery: a study of beta-lactam levels during burn debridement. *J Antimicrob Chemother*. Jul; 60(1):166-9.
 23. **Nohynek GJ, Lademann J, Ribaud C, Roberts MS** (2007). Grey goo on the skin? Nanotechnology, cosmetic and sunscreen safety. *Crit Rev Toxicol*, 37:1-27.
 24. **Mo YK, Kankavi O, Masci PP, Mellick GD, Whitehouse MW, Boyle GM, Parsons PG, Roberts MS, Cross SE** (2007). Surfactant protein expression in human skin: evidence and implications. *J Invest Dermatol*. Feb; 127(2):381-6.

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25. **Cross SE, Brian Innes B, Roberts MS, Tsuzuki T, Robertson TA, McCormick P** (2007). Human skin penetration of sunscreen nanoparticles: in-vitro assessment of a novel micronised zinc oxide formulation. *Skin Pharmacol Physiol* 20: 148-154.
 26. **Wang G, Shen H, Rajaraman G, Roberts MS, Gong Y, Jiang P, Burczynski F** (2007). Expression and antioxidant function of liver fatty acid binding protein in normal and bile-duct ligated rats. *Eur J Pharmacol* 560(1):61-8.
 27. **Arab HA, Cheung K, Hickman PE, Potter JM, Kadkhodae M & Roberts MS** (2007). Effects of hypoxia/reperfusion injury on drug disposition in the isolated perfused rat liver. *Clin Exp Pharmacol Physiol* 34(4): 332-338.
 28. **Fanning K & Roberts MS** (2007). Characterization of the physiological spaces and distribution of tolbutamide in the perfused rat pancreas. *Pharm Res* 24(3) 512-520.
 29. **King MA & Roberts MS** (2007). The influence of the Pharmaceutical Benefits Scheme (PBS) on inappropriate prescribing in Australia nursing homes. *Pharm World Sci* 29(1):39-42.
 30. **Roberts DM, Southcott E, Potter JM, Roberts MS, Eddleston M, Buckley NA** (2006). Pharmacokinetics of digoxin cross-reacting substances in patients with acute yellow oleander (*Thevetia peruviana*) poisoning, including the effect of activated charcoal. *Ther Drug Mon* 28(6):784-92.
 31. **Hunt CA, Ropella GEP, Yan L, Hung DY & Roberts MS** (2006). Physiologically based synthetic models of hepatic disposition. *J Pharmacokin Pharmacodynam* Dec; 33(6):737-72.
 32. **Sorensen L, Stokes JA, Purdie DM, Woodward M, Roberts MS** (2006). Medication management at home: Medication risk factors prevalence and interrelationships *J Clin Pharm Ther* 31: 485-491.
 33. **Magnusson BM, Cross SE, Winckle G & Roberts MS** (2006). Percutaneous absorption of Steroids: Determination of in-vitro permeability and tissue reservoir characteristics in human skin. *Skin Pharmacol Physiol* 19(6):336-342.
 34. **Hung DY, Siebert GA, Chang P, Whitehouse MW, Fletcher L, Crawford DHG, Roberts MS** (2006). Hepatic pharmacokinetics of Propranolol in rats with adjuvant-induced systemic inflammation. *Am J Physiol Gastroint Liver Physiol*. Feb; 290(2):G343-51.
 35. **Blazkiewicz P, Blazkiewicz K, Verhaege A, Anissimov YG, Roberts MS, Zvyagin AV** (2006). Dialysis-assisted fiber-optic spectroscopy for in situ biomedical sensing. *J Biomed Optics*. 11(1):014033.
 36. **Mollee T, Anissimov YA, Roberts MS** (2006). Periodic electric field enhanced transport through membranes. *J Membr Sci* 278(1-2), 290-300.
 37. **Xie H, Wang G, Chen M, Jiang X, Li H, Lu H, Huang C, Wang R, Roberts M** (2005). Uptake and metabolism of ginsenoside Rh2 and its aglycon protopanaxadiol by Caco-2 cells. *Biol Pharm Bull* 28(2), 383-386.

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38. **Hao H, Wang G, Sun J, Ding Z, Wu X, Roberts M** (2005). Unidirectional inversion of ibuprofen in Caco-2 cells: developing a suitable model for presystemic chiral inversion study. *Biol Pharm Bull.* Apr; 28(4):682-7.
 39. **Sorensen L, Stokes JA, Purdie DM, Woodward M, Roberts MS** (2005). Medication management at home: medication-related risk factors associated with poor health outcomes. *Age Ageing* Nov; 34(6):626-32.
 40. **Wang G, Gong Y, Anderson J, Sun D, Minuk G, Roberts MS, Burczynski FJ** (2005). Antioxidative function of L-FABP in L-FABP stable transfected Chang liver cells. *Hepatology* Oct; 42(4):871-9.
 41. **Rajaraman G, Roberts MS, Hung D, Wang GQ, Burczynski FJ** (2005). Membrane binding proteins are the major determinants for the hepatocellular transmembrane flux of long chain fatty acids bound to albumin. *Pharm Res* Nov; 22(11):1793-804.
 42. **Benson HAE, Sarveiya V, Risk S, Roberts MS** (2005). Influence of anatomical site and topical formulation on skin penetration of sunscreens. *Ther Clin Risk Manag* 1: 209-218.
 43. **Hayden CGJ, Cross SE, Anderson C, Saunders NA, Roberts MS** (2005). Sunscreen human skin penetration and related human keratinocyte toxicity after topical application. *Skin Pharmacol Physiol* 18:170-174.
 44. **Ientile CS, Sorensen L, Lemanski L, Roberts MS** (2005) Complementary medicines use by Australian veterans. *J Pharm Pract Res* 35 (2): 1-3.
 45. **Hung DY, Siebert GA, Chang P, Roberts MS** (2005). Hepatic pharmacokinetics of taurocholate in the normal and cholestatic rat liver. *Br J Pharmacol* May; 145(1):57-65.
 46. **Burczynski FJ, Hung D, Wang GQ, Elmadhoun B, Lewis A, Chang P, Rajaraman G, Roberts MS** (2005). Assessing the cellular transmembrane electrical potential difference on the hepatic uptake of palmitate. *Mol Cell Biochem* Feb; 270(1-2):115-24.
 47. **Chang P, Hung DY, Siebert GA, Bridle K, Roberts MS** (2005). Therapeutic effects and possible mechanisms of a snake venom preparation in the fibrotic rat liver. *Dig Dis Sci.* Apr; 50(4):745-52.
 48. **Chilcott RP, Barai N, Beezer AE, Brain SI, Brown MB, Bunge AL, Burgess SE, Cross S, Dalton CH, Dias M, Farinha A, Finnin BC, Gallagher SJ, Green DM, Gunt H, Gwyther RL, Heard CM, Jarvis CA, Kamiyama F, Kasting GB, Ley EE, Lim ST, McNaughton GS, Morris A, Nazemi MH, Pellett MA, Du Plessis J, Quan YS, Raghavan SL, Roberts M, Romonchuk W, Roper CS, Schenk D, Simonsen L, Simpson A, Traversa BD, Trotter L, Watkinson A, Wilkinson SC, Williams FM, Yamamoto A, Hadgraft J** (2005). Inter- and intralaboratory variation of in vitro diffusion cell measurements: an international multicenter study using quasi-standardized methods and materials. *J Pharm Sci* 94(3):632-638.
 49. **Hung DY, Siebert GA, Chang P, Burczynski FJ, Roberts MS** (2005). Reduced hepatic extraction of palmitate in steatosis correlated to lower level of liver fatty acid binding protein. *Am J Physiol Gastroint Liver Physiol* 288(1):G93-G100.

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50. Bjorkman ST, ODriscoll SM, Burke C, Roberts MS, Colditz PB (2005). Hypercapnic acidosis following hypoxia in newborn piglet, a potential neuroprotectant? *J Neurochem* 94: 47-48.
 51. Hung DY, Siebert GA, Chang P, Anissimov YG, Roberts MS (2004). Disposition Kinetics of Propranolol Isomers in the Perfused Rat Liver. *J Pharmacol Exp Ther* 311: 822-829.
 52. Siebert GA, Hung DY, Chang P, Roberts MS (2004). Ion-trapping, microsomal binding and unbound drug distribution in the hepatic retention of basic drugs. *J Pharmacol Exp Ther* 308(1):228-35.
 53. Peachey KM, Ientile C, Stokes JA, Roberts MS (2004). Are community nursing patients falling through the gaps in medication-related risk reduction strategies. *Aust Pharm* 23(5) 398-406.
 54. Magnusson BM, Anissimov YG, Cross SE, Roberts MS (2004). Molecular size as the main determinant of solute maximum flux across skin. *J Invest Dermatol* 122(4):993-9.
 55. Magnusson BM, Pugh WJ, Roberts MS (2004). Simple rules defining the potential of compounds for transdermal delivery or toxicity. *Pharm Res* 21(6):1047-54.
 56. Sorensen L, Stokes JA, Purdie DM, Woodward M, Elliott RA, Roberts MS (2004). Medication reviews in the community: Results of a randomised controlled effectiveness trial. *Br J Clin Pharmacol* 58 (6): 648-664.
 57. Anissimov YG, Roberts MS (2004). Diffusion modelling of percutaneous absorption kinetics: 3. Variable diffusion and partitioning coefficients. *J Pharm Sci* 93 (2): 470-87.
 58. Roberts MS, Anissimov YG, Cross SE (2004). Factors affecting the formation of a skin reservoir for topically applied solutes. *Skin Pharmacol Physiol*. 17 (1): 3-16.
 59. Craft JA, Masci PP, Roberts MS, Brighton TA, Gerrahy P, Cox PS, Marsh NA (2004). Increased platelet-derived microparticles in the coronary circulation of percutaneous transluminal coronary angioplasty patients. *Blood Coagul Fibrinolysis* 15(6): 475-82.
 60. Craft JA, Masci PP, Roberts MS, Brighton TA, Gerrahy P, Cox PS, Marsh NA (2004). Increased platelet-derived microparticles in the coronary circulation of patients undergoing coronary angioplasty. *J Mol Cell Cardiol* 37: 296.
 61. Kankavi O, Roberts MS (2004). Detection of surfactant protein A (SP-A) and surfactant protein D (SP-D) in equine synovial fluid with immunoblotting. *Can J Vet Res* 68(2):146-9.
 62. Mills PC, Siebert GA, Roberts MS (2004). A model to study intestinal and hepatic metabolism of propranolol in the dog. *J Vet Pharmacol Ther* 27: 45-48.
 63. Stokes JA, Purdie DM, Roberts MS (2004). Factors influencing PRN medication use in nursing homes. *Pharm World Sci* 26(3): 148-154.

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64. **Sorensen L, King MA, Peck R, Roberts MS** (2004). In-home medication reviews for war veterans: early experience in Australia. *J Pharm Prac Res* 34(2): 122-124.
 65. **Cross SE, Anissimov YG, Magnusson BM, Roberts MS** (2003). Bovine serum albumin-containing receptor phase better predicts transdermal absorption parameters for lipophilic compounds. *J Invest Dermatol* 120(4): 589-91.
 66. **Cross SE, Magnusson BM, Anissimov YG, Winckle G, Roberts MS** (2003). Determination of the effect of lipophilicity on the in-vitro permeability and tissue reservoir characteristics of topically applied solutes in human skin layers. *J Invest Dermatol* 120(5):759-64.
 67. **Hung DY, Burczynski FJ, Chang P, Lewis A, Masci PP, Siebert GA, Anissimov YG, Roberts MS** (2003). Fatty acid binding protein is a major determinant of hepatic pharmacokinetics of palmitate and its metabolites. *Am J Physiol Gastroint Liver Physiol* 284:G423-G433.
 68. **Mueller B, Anissimov YG, Roberts MS** (2003). Unexpected clobetasol propionate in human stratum corneum after topical application in vitro. *Pharm Res* 20 (11): 1835-7.
 69. **Rosado C, Cross SE, Pugh WJ, Roberts MS, Hadgraft J** (2003). Effect of vehicle pre-treatment on the flux, retention and diffusion of topically applied penetrants in vitro. *Pharm Res* 20(9): 1502-1507.
 70. **Cross SE, Thompson MJ, Roberts MS** (2003). Transdermal penetration of vasoconstrictors: present understanding of the human epidermal flux and retention of free bases and effect of ion-pairing. *Pharm Res* 20(2): 270-4.
 71. **Sorensen L, King MA, Ientile CS, Roberts MS** (2003). Has drug therapy gone to the dogs? *Age Ageing* 32(4): 460-1.
 72. **Sorensen L, Grobler M, Roberts MS** (2003). Development of a quality use of medicines coding system to rate clinical pharmacists' medication review recommendations. *Pharm World Sci* 25 (5): 212-217.
 73. **Bridle K, Fletcher L, Murphy T, Walters M, Hung D, Change P, Siebert G, Roberts M, Crawford D** (2003). A comparison of the hepatic extraction of transferrin-bound and non-transferrin bound iron in an animal model of hemolytic anemia. *J Gastroenterol & Hepatol* 18 (S2): B59-B90.
 74. **Hung DY, Chang P, Cheung K, Winterford C, Roberts MS** (2002). Quantitative evaluation of altered sinusoidal space and membrane transport in cirrhotic rat liver using histopathological analyses and multiple indicator dilution techniques. *Hepatology* 36: 1180-1189.
 75. **Hung DY, Chang P, Cheung K, McWhinney B, Masci PP, Weiss M, Roberts MS** (2002). Cationic drug pharmacokinetics in diseased livers determined by fibrosis index, hepatic protein content, microsomal activity and nature of drug. *J Pharmacol Exp Ther* 301(3): 1079-87.

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76. **Roberts MS, Magnusson BM, Burczynski FJ, Weiss M** (2002). Enterohepatic circulation: physiological, pharmacokinetic and clinical implications. *Clin Pharmacokinet* 41(10): 751-790.
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